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PATENT

IN THE UNITED STATES PATENT OFFICE

Serial No.: 09/463,801

Filed: January 27, 2000

For: MEDIUM FOR PRODUCING AND/OR
TREATING ALCOHOLIC BEVERAGES,
ESPECIALLY WINE OR SPARKLING
WINE, AS WELL AS ITS APPLICATIONS

Inventor: Holger Lowe
Rainer Pommersheim

Atty Doc. No.: 678-99

Certificate of Mailing

I hereby certify that this correspondence is being
deposited with the United States Post Office as first class
mail postage prepaid in an envelope addressed to the
Assistant Commissioner for Patents,
Washington, D.C. 20231 on March 16, 2000.

John F. McNulty
John F. McNulty, Reg. No. 23,028
Dated: March 16, 2000

COVER LETTER WITH CERTIFICATE OF MAILING

Assistant Commissioner
for Patents
Box Missing Part
Washington, D.C. 20231

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APR 27 2000

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Sir:

Enclosed and attached hereto are the following documents for filing in the above-identified patent application:

1. Executed Declaration and Power of Attorney;
2. Check in the amount of \$130.00 in payment of surcharge;
3. Cover letter with certificate of mailing;
4. Postcard to be date-stamped & returned to Paul & Paul.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES ASSOCIATED WITH THIS COMMUNICATION, OR CREDIT ANY OVERPAYMENT, TO PAUL & PAUL DEPOSIT ACCOUNT NO. 16-0750, ORDER NO. 3205.

Respectfully submitted,

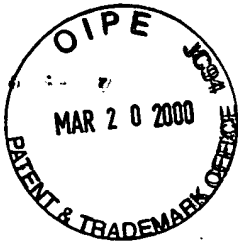
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IN THE UNITED STATES PATENT OFFICE

PATENT

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Patents, Washington, D.C. 20231 on
March 16, 2000.

John F. McNulty
John F. McNulty, Reg. No. 23,028
Dated: March 16, 2000

2816

COVER LETTER WITH CERTIFICATE OF MAILING

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Enclosed and attached hereto are the following documents:

- (1) Copy of English translation of International
Preliminary Examination Report;
- (2) Cover Letter with Certificate of Mailing, and
- (3) Paul & Paul postcard to be returned by PTO.

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JUL 20 2000

TECHNOLOGY CENTER 2800

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES ASSOCIATED
WITH THIS COMMUNICATION, OR CREDIT ANY OVERPAYMENT, TO PAUL & PAUL DEPOSIT ACCOUNT NO.
16-0750, ORDER NO. 2206.

Respectfully submitted,

John F. McNulty
John F. McNulty
Reg. No. 23,028
Paul & Paul

2900 Two Thousand Market St.
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PATENT COOPERATION TREATY

PCT
NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 72.2)

Eingang: 24. JAN. 2000		IMM	
From the INTERNATIONAL BUREAU			
WE	DE	FR	ML
LW	FH		
weiter an			

INSTITUT FÜR MIKROTECHNIK MAINZ
 GMBH
 Carl-Zeiss-Strasse 18-20
 D-55129 Mainz
 ALLEMAGNE

Date of mailing (day/month/year) 14 January 2000 (14.01.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference EM 49-97	
International application No. PCT/EP98/04726	
Applicant INSTITUT FÜR MIKROTECHNIK MAINZ GMBH et al	International filing date (day/month/year) 29 July 1998 (29.07.98)

1. Transmittal of the translation to the applicant.

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

2. Transmittal of the copy of the translation to the elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

JP, US

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

EP

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer F. Baechler Telephone No. (41-22) 338.83.38
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Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference EM 49-97	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP98/04726	International filing date (day/month/year) 29 July 1998 (29.07.1998)	Priority date (day/month/year) 30 July 1997 (30.07.1997)
International Patent Classification (IPC) or national classification and IPC C12G 1/02, 1/073, C12C 11/09, C12N 11/04		
Applicant INSTITUT FÜR MIKROTECHNIK MAINZ GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

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Date of submission of the demand 19 February 1999 (19.02.1999)	Date of completion of this report 05 August 1999 (05.08.1999)
Name and mailing address of the IPEA/EP European Patent Office D-80298 Munich, Germany Facsimile No. 49-89-2399-4465	Authorized officer Telephone No. 49-89-2399-0

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP98/04726

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-14, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. 2-21, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. 1, filed with the letter of 23 July 1999 (23.07.1999),
 Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/1, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 98/04726

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-21	YES
	Claims		NO
Inventive step (IS)	Claims	9, 10, 12, 13, 20, 21	YES
	Claims	1-8, 11, 14-19	NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO

2. Citations and explanations**1) Reference is made to the following documents:**

D1 WO-A-94/23832

D2 US-A-5 627 062

D3 EP-A-0 133 346

D4 EP-A-0 681 834

2) The present application does not meet the criterion stipulated in PCT Article 33(3), since the subject matter of Claim 1, although novel (PCT Article 33(2)), does not involve an inventive step (PCT Rule 65.1 and 65.2).

a) D1 discloses merely particles, in particular microcapsules, which have a central part consisting of a thickened or liquefied aqueous phase that contains cells or enzymes and also has an outer layer that does not contain the incorporated material (cells, enzymes). Consequently, in contrast to the present Claim 1, D1 describes merely an enveloping membrane consisting of one layer.

D2 concerns gel particles with a double layer structure. The inner layer or the core of the gel

particles contains the micro-organisms to be immobilised. The outer layer is substantially free of said cells. Yeasts for producing sparkling wine are mentioned as preferred micro-organisms.

D3 simply describes a permeable membrane over yeast cells immobilised in a polymer matrix.

In contrast to the structures of D1-D3, the different layer structure in the present Claim 1 permits a plurality of properties (e.g. porosity; mechanical properties) to be set independently.

- b) D4 describes capsules with a multi-layer enveloping membrane, in particular for the immobilisation of living cells or of enzymes (see the claims) for use in the medical industry. The use of such capsules for the production and/or treatment of alcoholic beverages is not disclosed.

In response to the first written report, the applicants argued that, owing to the disadvantages of membranes with ion bonds, such as low mechanical stability, discussed in D1 (page 2, lines 12-18), a person skilled in the art would not have been induced to use similar enveloping structures with ion bonds, as known from D4, for immobilising fast-growing and/or carbon dioxide producing micro-organisms, such as yeasts.

It is noted that the partial sentence in Claim 1, "for the production and/or treatment of alcoholic beverages" is considered to mean suitable for the said treatment/production (cf. Guidelines, Chapter III, 4.8). The micro-organisms and enzymes are not

specified further in Claim 1. At least the use of specific enzymes (page 1, paragraph 2 of the description specifies pectinases for accelerating must clarification) would not, however, appear to result in the disadvantageous effects discussed by the applicants. The International Preliminary Examining Authority must rather assume that a person skilled in the art would at any time transfer knowledge available in a similar technical field to his own field if he has to carry out only routine work with the usual experimental effort and provided that no incalculable risks were involved. Obtaining enclosed enzymes in an optimally active state during controlled mass transfer, as proposed, for example, for bioreactors (cf. D4, column 1, lines 26-49), for a similar purpose in the production of alcoholic beverages is therefore a routine measure for a person skilled in the art.

Consequently, the subject matter of Claim 1 and of dependent Claims 2-8, 11 and 14-19 lacks inventive step over the teaching of D4 (PCT Article 33(3)).

- 3) The subjects of dependent Claims 9, 10, 12, 13 and of independent Claims 20 and 21 appear to be novel and inventive in the light of the known prior art (PCT Article 33(2) and (3)).

The applicants' argument mentioned above under point 2b concerning the reluctance of a person skilled in the art to use membranes with ion bonds for fast-growing micro-organisms from the production or treatment of alcoholic beverages can essentially be acknowledged. A person skilled in the art would therefore not have been induced to alter the

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 98/04726

capsules known from D1-D3 such that they have a multi-layer enveloping membrane as per D4. The advantages achieved are the same as discussed in point 2a above.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 98/04726

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to PCT Rule 5.1(a)(ii), the description does not cite documents D1-D3 nor the relevant prior art disclosed therein.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- 1) A relative expression such as "low molecular alcohol(s)" without a clear point of reference to the field of organic chemistry and which has no generally recognised meaning in relation to the maximum number of carbon atoms, is ambiguous and is therefore not suitable for clarifying the subject matter for which protection is sought in Claim 21 (PCT Article 6).
- 2) The expression "in high yields" is relative, renders the scope of protection of Claim 21 unclear and is not suitable for delimiting the subject matter of said claim from the prior art (PCT Article 6; see also Guidelines, Chapter III, 4.5).
- 3) Owing to the expressions "preferably", "in particular", "such as [...]", the scope of protection of Claims 9 and 17 is unclear (PCT Article 6; cf. Guidelines, Chapter III, 4.6).